United States Patent [19]

Saxe

[11] **4,407,565**

[45] **Oct. 4, 1983**

[54] **LIGHT VALVE SUSPENSION CONTAINING FLUOROCARBON LIQUID**

[75] Inventor: **Robert L. Saxe,** New York, N.Y.

[73] Assignee: **Research Frontiers Incorporated,** Plainview, N.Y.

[21] Appl. No.: **252,757**

[22] Filed: **Jan. 16, 1981**

[51] **Int. Cl.**[3] **G02F 1/01**

[52] **U.S. Cl.** **350/374;** 252/582; 252/583; 252/585; 350/356; 350/362; 350/397

[58] **Field of Search** 252/582, 583, 585, 589; 350/356, 362, 374, 397

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,247,175	1/1981	Saxe	350/362
4,270,841	6/1981	Saxe	350/356

FOREIGN PATENT DOCUMENTS

2391767	1/1979	France	252/582
53-144895	12/1978	Japan	252/582

OTHER PUBLICATIONS

Wertheim, Textbook of Organic Chemistry, 3rd Ed., McGraw-Hill Book Co., Inc., New York, 1951, pp. 736 and 737.

Primary Examiner—Leland A. Sebastian

Attorney, Agent, or Firm—Jacobs & Jacobs

[57] **ABSTRACT**

In a light valve, comprising a cell containing a suspension of particles in a liquid suspending medium, the improvement wherein said light valve suspension comprises particles of a perhalide of an alkaloid acid salt or a light-polarizing metal halide or perhalide suspended in said liquid suspending medium and a protective polymer effective to inhibit agglomeration of said particles dissolved in said liquid suspending medium, said liquid suspending medium comprising an electrically resistive, inert, low molecular weight, liquid fluorocarbon polymer having a specific gravity at room temperature of at least about 1.5 and having at least about 50% of its atoms constituted by halogen atoms, at least 60% of said halogen atoms being fluorine and the balance chlorine and/or bromine, and an electrically resistive organic liquid miscible with the fluorocarbon liquid, said fluid suspending medium being operable to suspend said particles in substantial gravitational equilibrium.

26 Claims, No Drawings